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Diseases of Animals—Future Legislation.

The discussion on Prof. Penberthy's paper at the Farmers Club was interesting and instructive, although adding nothing to veterinary science. Legislation against disease requires more than professional knowledge. It must be practical, and the experience of administrative difficulties supplied by men engaged, either locally or centrally, in suppressing disease is invaluable. In our report can be read suggestive remarks bearing upon the efforts now being made to control disease among stock.

What we specially desire to draw attention to is the speech of Sir Thomas Elliott, who referred to two diseases which some day will probably engage the attention of the Board. One—Contagious Abortion—is now receiving careful investigation by a Committee appointed by the Board, and Sir Thomas spoke hopefully of progress made and of eventual action. The other—Tuberculosis—has been the subject of consideration by numerous committees and commissions whose work seems ripe for translation into preventive legislation, but Sir Thomas handled it very cautiously—a very right and proper attitude for the chief of a department that would be responsible for the success or failure of any legislative measures.

Sir Thomas Elliott said: "Some people had loosely said, "Oh! schedule it under the Diseases of Animals Act." That was a very pretty phrase, but one had to think more of what was meant by scheduling disease under that Act." This is a disappointing pronouncement, although the speaker went on to approve of approaching the disease by degrees, of dealing more efficiently with udder disease, and getting rid of the little Local Acts that bothered everybody.

We have had many years experience of the working of the Diseases of Animals Acts, and we really know no dangers or difficulties that attend scheduling a disease, except that when once done it is impossible to run back or stand still. But progress need not be rash or hurried. The scheduling of tuberculosis need only touch one point likely to cause a little friction, *i.e.* when once scheduled a disease must be notified. We have thought over this point often, but can see no more likelihood of trouble resulting from compulsory notification of tuberculosis than was experienced with glanders, pleuro-pneumonia, or foot and mouth. The regulations following upon notification need not be made too irksome, and for a time the cases only diagnosable by tuberculin may be left out of the scheme. That an owner should be compelled to notify all cases of tuberculous udder and all easily recognisable "wasters" requires no argument. The disposal of such dangerous animals by slaughter with a small compensation, such as is paid for clinically glandered horses, would meet with no opposition from any honest and sane man. The scheduling of tuberculosis with only these regulations would meet half the difficulties of meat and milk inspection, and would put an end to nearly all the confusion resulting from private Acts, and the overlapping of the Local Government Board with the Board of Agriculture.

Posology.

Many of our readers are no doubt following the discussion upon the medicinal dose of strychnine and nux vomica now proceeding in our columns. The subject is of importance, and the attention now drawn to it cannot fail to have beneficial results. We may, perhaps, express a little surprise that it should be necessary, as it undoubtedly is, to discuss this particular point at all. Considering the very general use of nux vomica by veterinary surgeons for many years past, its universally recognised dangers, and the frequent impossibility of combating the effects of a toxic dose, it might have been expected that the question of what constitutes a safe medicinal dose would have been settled long ago. Yet it is still far from being settled, and the same might be said of not a few other drugs which are known to have toxic effects.

The posology of toxic drugs, for obvious reasons, will always be a much more complex subject in veterinary than in human medicine. This is especially the case in canine practice on account of the enormous variation in size and susceptibility of the different breeds. It must be confessed that textbooks scarcely take sufficient cognisance of variations of size in particular, for although the weight of adult dogs ranges from under 5 lbs. to considerably over 100 lbs., we usually find the maximum and minimum dose of any agent fixed very much in accordance with the comparatively narrow limits of human medicine.

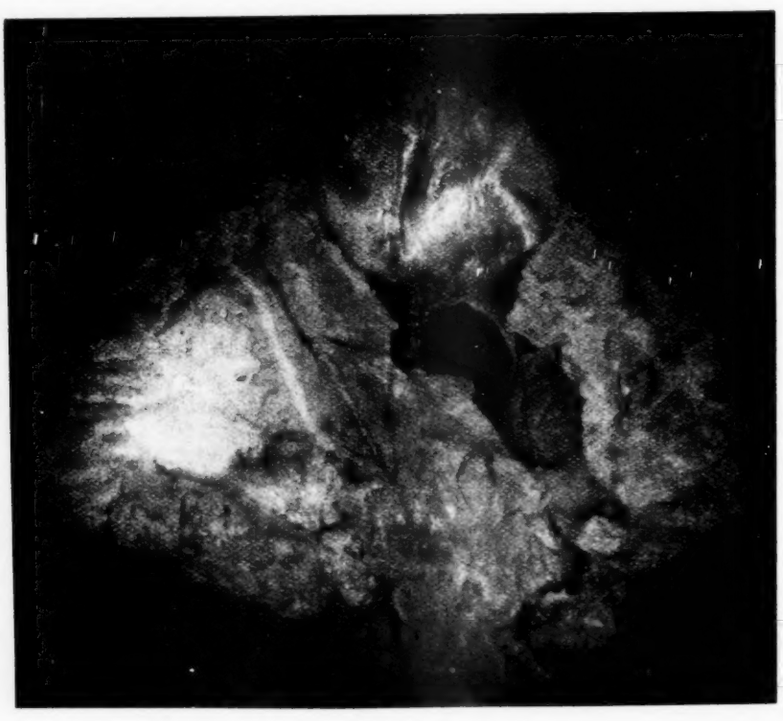
Perhaps this is one reason why there should be a tendency on the part of some veterinarians to avoid the use of admittedly dangerous drugs in canine practice. We know of many good clinicians, for instance, who have altogether relinquished the external application of such agents as mercurials and carbolic acid to the dog. The efficacy of these drugs is proved, but their employment entails risks which may lead to their complete disuse in canine practice. We agree with Mr. Peddie, and should be sorry to see nux vomica meet the same fate, but in one respect at least it is more dangerous than even mercury, and it is imperative that its posology should be well understood.

The dog really deserves a long special chapter to himself in every text book of veterinary therapeutics, but such a chapter has yet to be written. In the meantime, the views of experienced clinicians are always valuable. The present discussion is especially so, for it concerns a drug which, although generally admitted to be one of the most useful in the pharmacopœia, is certainly also one of the most dangerous.

A BRAIN TUMOUR.

By R. Porch, F.R.C.V.S.

This case is one in which the ordinary psammoma was found in the usual position, but I report it because the symptoms, in my experience, are not such as generally arise from tumours in the brain.



A mare about ten years old was found on Aug. 30 last lame on the near fore leg, but no cause for it could be discovered. Next day the lameness was more marked, and a very peculiar movement of the limb was noticeable. When made to walk, she would go a few steps without anything abnormal occurring, and then would bring forward the near fore limb with a jerk, placing the foot on the ground in front of the opposite leg. There was also a twitching and drawing up of the near side of the lip.

On the third day, the mare stood in her stall quietly and fed from the manger. When an attempt was made to turn her round she nearly fell. When we tried to back her out she merely moved her body without raising her feet, leaning back till all the weight seemed to be upon the hind limbs, and her fore legs remained fixed obliquely—not unlike the position seen in laminitis. When forced to move the near fore limb was brought so prominently in front of the other that progression was very difficult.

On the fourth day she stood rather listlessly in her stall. When the flies worried her she used her hind legs to dislodge them quite naturally. The twitching of the lip was more pronounced, and amaurosis existed. It was almost impossible to move her from the manger. To turn her to the off-side was impossible, but she was turned to the near side and walked up the stable. The same condition of the near fore leg was evident and there was unsteadiness of gait. The hind limbs moved freely.

In the afternoon she got down and lying on her side kept up a continuous movement of all her legs as though galloping. She was destroyed by division of the aorta so as to prevent injury to the brain in view of a post-mortem. The tumour was in the left ventricle, and about the size of a pigeon's egg.

We sent the specimen to the College, and in the absence of Sir John M'Fadyean it was examined by Mr. Ernest Sheather, to whom I am indebted for the photograph. I ought, perhaps, to add that the portion of brain shown is about ¼ of the organ, which was much lacerated in its removal.

I recorded a case of tumour on the brain in *The Record* some time ago, and have discovered others on post-mortem, but I have never before seen symptoms quite like those exhibited in this case. The mare had never been ill, she had been in constant work, and she had shown no peculiarities of action, habits, or manners. It seems very remarkable that a tumour of this size should develope without causing a sign of its existence till four days before death.

THE DOSE OF NUX VOMICA AND STRYCHNINE FOR THE DOG.

I read with much interest the remarks by Mr. E. Wallis Hoare, in *The Veterinary Record* of Nov. 9 on the above subject, and I entirely agree with his observations.

For many years I have had a very considerable practice among dogs, and have had frequent opportunities of noting the effects of the drug in question on those animals. I am quite certain that the dose of strychnine for the dog given by Mr. Gillam, in his well written article on the Toxic action of certain drugs on the smaller animals, is much too large. He gives the dose of Strychnine as gr. 1/30 to 1/20, Pulv. nux vom. gr. i. to gr. iii., and Extract nucis vom. gr. 1/4 to gr. i. Now I am quite certain that in many cases the minimum dose of Strychnine given, viz., gr. 1/30 would undoubtedly produce toxic symptoms and kill some of our smaller canine patients, such as fox and Irish terriers, pugs, etc.

I have on more than one occasion seen a pug dog and a fox-terrier showing marked toxic symptoms with convulsions after the administration of gr. 1/60 of Strychnine, and I also know of a bulldog weighing 46lb. being poisoned by one teaspoonful, by the measureglass, of Easton's Syrup, which represents gr. 1/32 of Strychnine.

The point I wish to emphasise is that enunciated by Mr. Hoare, viz., that pharmaceutical preparations containing Nux vomica and Strychnine prepared for human beings are often dangerous for dogs of ordinary size and weight, and that when Strychnine has to be administered it is well to begin with a small dose, bearing in mind that it is slowly excreted from the body and is therefore cumulative.

The doses of Nux vomica and its preparations which I consider and have found safe for dogs are as follows: Pulv. nux vom., which contains 0·7 to 1·5 per cent. of Strychnine, gr. 1/4 to gr. i.; Ext. nucis vom., which contains 5 per cent. Strychnine, gr. 1/20 to gr. 1/6; Strychnine hydrochlor, nitrate, sulphate, or hydro-bromide gr. 1/400 to gr- 1/60.

In the current issue of *The Veterinary Record* there is an article from the pen of Mr. Henry Gray on this subject, and I am rather surprised to read therein that he considers Nux vomica or Strychnine of no value in canine practice, and that on account of the risk of poisonous symptoms such a drug should never be administered. With this I cannot agree. I am quite willing to admit that the drug is contra-indicated in acute nervous diseases, but I am also equally certain that as a bitter and general tonic in recovery from debilitating diseases, and in certain nervous affections, especially paralysis, it is when properly administered of the greatest value. I have no time to deal with the post-mortem appearances which are not regular, but would like to add a word or two with regard to antidotal treatment. In poisoning by Strychnine an emetic should be given and undoubtedly apo-morphine is the best. Tannin, and Potass. permang. render any remaining alkaloid inactive. If the convulsions are severe and the breathing embarrased Chloroform anæsthesia should be immediately resorted to, until slower acting remedies such as Chloral and Potass. bromide can be administered in sufficient doses to control the symptoms.

I should not, however, like to depend entirely on Chloroform narcosis, as suggested by Mr. Henry Gray, in the treatment of poisoning by this drug, as it would mean that an experienced anæsthetist would have to be in attendance on the patient for a very considerable time.

Another agent of great value in controlling the symptoms in Strychnine poisoning is Alcohol. My attention was drawn to this method of treatment by a medical friend, and I have treated a few cases successfully by this agent and have considerable confidence in recommending it. The brandy must be given in stiff doses to begin with, by mouth and per rectum, and the patient kept under its influence for a considerable period until the poison has time to be eliminated from the body.

One of my earliest cases of Strychnine poisoning treated by this method was unsuccessful, but I am firmly convinced the fault was mine and that I allowed the animal to come out of the influence of the brandy too soon.

I remember reading in some journal of another method of treating Strychnine poisoning in dogs, which consisted in the hypodermic injection of 75 centigrammes of a saturated solution of Iodide of potassium, roughly 11 grains Potass. iodide, followed by the administration of a mixture containing 6 grains of Chloral hydrate, and a similar quantity of Bromide of potassium in each dose, given every half-hour and continued as long as necessary. This treatment is said to be very effectual and to quickly remove the tetanic spasms, stiffness, and difficulty of breathing. It is a matter of importance whatever antidote is used to see that the patient is kept under its influence for a sufficient length of time.

JAMES PEDDIE, F.R.C.V.S.

A PLEA FOR PHLEBOTOMY.

Your Editorial in last week's *Record* reminds me that some two years ago I collected some notes and observations upon the beneficial influences of blood letting in selected cases, but through pressure of work these notes were left unrecorded.

With your remarks on this subject I entirely agree, fearing that a highly successful line of treatment in combating disease has been unwisely discarded by present day practitioners.

For this there appears to be several reasons. In days gone by the operation was performed as a matter of routine without the slightest attempt at selection, and such a proceeding would doom any operation to failure, and the method to obloquy. Medicine, like many other things, is somewhat swayed by fashion, and teachers as well as practitioners are liable to be influenced thereby, we are also too much inclined to follow the dictates of human medicine on many points, but in this we are liable to be misled as far as phlebotomy is con-

cerned, inasmuch as human practitioners are more justified than we are in discarding blood-letting, by reason of the fact that the patients of the former are more neurotic and less plethoric to-day than they were, say, 50 years ago. It is not so, however, with our patients, as witness the full blooded and over nourished condition of horses in town drays, and the cattle at agricultural shows. When one considers the various antiphlogistic remedies, and remembering that blood letting is the most powerful of these, it seems somewhat strange that even with its bad reputation it should be so universally neglected.

Speaking as a clinician who has adopted vein section on selected and suitable cases for many years, I say emphatically that I have had results from blood letting which no drug or drugs in the British Pharmacopœia could have given me. It must, therefore, follow that if the practitioner fails to obtain the results he anticipates from the operation the disappointment is due to unsuitable selection, for which phlebotomy should not be blamed. To arrive at a conclusion as to whether a case is suitable to bleed, one must remember what effects vein section has on the economy. These are as follows: A sudden sedative action of the heart, diminution of blood pressure (much greater than could be caused by aconite or such agents) the reduction of the supply of blood to the inflamed area, further influenced by the depletion, bleeding has a distinct derivative effect upon the inflamed zone.

The disgorgement of the blood vessels within the inflammatory zone facilitating the inflammatory influences of the absorbents; this I have frequently demonstrated in practice by selecting two patients both apparently suffering from a similar attack of lymphangitis. By treating the one with ordinary medical depletives, and the other by bleeding in addition, just previous to the effusive stage, the leg in the former will swell, beginning usually in the groin and extending down the leg becoming daily larger, and in the latter the effusion will be but slight and will disappear more quickly. Should blood letting fail to check the inflammatory area it will in many cases modify the character and intensity of the disease by diminishing the means whereby the inflamed zone is replenished, and should an exudate form it is not fibrinous and is consequently more easily absorbed.

Finally, it is a powerful febrifuge. I have seen the temperature go down four to five degrees in a few hours. To obtain from phlebotomy the best results one must bleed before serious tissue changes take place. It is the diseased action and not the lesion itself that phlebotomy tends to check, and acts beneficially upon it. Where the premonitory symptoms have passed over, perhaps unnoticed, leaving the patient exhausted and debilitated as is seen in low fevers, venesection is contra-indicated, and this remark also applies to the specific fevers.

Those cases which respond most successfully to vein section are to be found in grossly fed, full blooded, high conditioned animals suffering from congestion of the lungs, pneumonia, pleurisy, peritonitis, cerebro-spinal meningitis (in the three latter before effusion has taken place) muco-enteritis, laminitis, and lymphangitis etc. In these foregoing diseases the temperature is usually high, the respiration hurried, the mucous membrane injected, pains severe, and the pulse full and strong.

If these symptoms are present, and the case is seen before effusion and the complete effusion stage is reached, there is no drug I am acquainted with which will produce such a sudden and salutary reaction as venesection. Some practitioners advise bleeding where the pulse is full and strong only. I have gone even further and bled when the pulse is feeble and of small volume, particularly in pulmonary diseases when the temperature is high and the membrane deeply injected, almost cyanotic, extremities cold, pulse weak and oppressed. Bleeding here relieves the engorgment, the result of impeded circulation through the left heart and lungs, equalising the systemic circulation by extracting from the inflamed area excess of blood, and at the same time establishing better oxygenation. But blood letting in these cases should always be followed by the administration of diffusible stimulants and digitatis.

W. M. Scott, F.R.C.V.S.

Bridgwater.

ABSTRACTS FROM FOREIGN JOURNALS

Immunisation against Rabies by the Ingestion of Virulent Material.

Antoine, in the *Annales de Médecine Vétérinaire* of October, 1907, gives a summary of a communication by D. Garcia e Jzcara, which appeared in the *Boletin del Instituto Alphonso*, xiij. of June 30, 1907.

A dog was regularly fed upon the carcases (previously deprived of their spinal cords) of rabbits which had been used for anti-rabic inoculation. Since December, 1905, he has eaten 300 of these rabbits. The object of the experiment, in the first place, was to confirm the view that the virus of rabies is not absorbed by the intact digestive mucous membrane; but afterwards the author, having read the accounts of immunisation against tuberculosis by means of the digestive tract, was led to inquire whether this dog had acquired immunity against rabies from his diet of virulent material.

The animal was therefore repeatedly exposed to "natural" infection by allowing him to be bitten by rabid dogs purposely placed in contact with him. This was done on four separate occasions in 1906, viz., February 26th and 27th, June 1st, and finally in October, the exact date of the last exposure not being given. The same rabid dog was used upon the two successive days in February. All three dogs were undoubtedly rabid, this being proved in each case by microscopic examination and the usual inoculation tests.

Finally, on March 5th, 1907, a concentrated emulsion of nervous substance was obtained from the bulb of a dog dead of paralytic rabies, and the

animal under observation received two injections of this—one intra-ocular, and another intra-muscular in the neck. All these severe tests failed to produce rabies,

The author considers that in anti-rabic immunisation, it is the toxin, not the living agent, which produces immunity.

He explains the immunity conferred by the hypodermic method in accordance with this hypothesis. In the present case, in which large quantities of rabic virus were *ingested*, he suggests that the hydrochloric acid of the gastric juice destroyed the living germ of rabies, but not the toxin which, absorbed by the gastro-intestinal mucous membrane, stimulated the nervous centres to produce an anti-toxin capable of neutralising all new rabic invasion, whatever its channel of entry into the organism might be.

The author intends to test his conclusions by further experiments.

W. R. C.

[It is stated that the dog ate all the virulent rabbits available during this period of about eighteen months, but it is not clear whether the supply of such material was regularly or irregularly intermittent. Considering the impossibility of ensuring at any time that the digestive mucous membrane is absolutely intact, it is not at all likely that this method of immunisation against rabies will ever be adopted in practice. But the experiment is very interesting, and, if confirmed, must have some indirect value.—TRANS.]

SUPERVISION OF THE MILK SUPPLY AND MILK TRADE.

(Continued from page 331.)

The kind and degree of the different inflammations of the udder are of the very greatest significance in practical milk control.

First of all it may be noticed that acute inflammations of the udder accompany severe internal illnesses. Further it is known that blood p isons may occur in the udder rendering the flesh injurious. Here the poisoning by flesh of Cotta and Wurzen may be mentioned. For the rest it may be said that the greatest number of udder inflammations we know to-day arise from infection. Here a rank of bacteria come under notice of which the streptococci are in the first line. But here it may be observed that staphylococci always, and at times streptococci, after correct examination will be found in the milk of healthy women, and that bacteria of this group are extremely frequently found in market milk without it being in the slightest degree injurious. Streptococci therefore only come under notice in practical milk control if they arise from a bad udder. Therefore from a bacteriological examination of market milk alone nothing can be done. Only the veterinary examination of milk cows is effective here.

The number of authenticated cases where after the use of milk from cows with bad udders severe illness and even death of mankind has occurred is not a small one. Edwards and Severn (*The Lancet*, 1897) record an epidemic of follicular tonsilitis after the use of a collected milk which contained Staphylococcus aur., S. alb. and Streptococus pyogenes The bacteria arose from the milk of one cow with an affected udder that was mixed with the other milk. It is not a matter of wonder that only a few litres of such milk can render a great quantity of milk injurious to health, for milk is a marked out nourishing ground for bacteria of all kinds, and many germs injurious to health increase and flourish therein. Further proofs are afforded by the observations of Prof. Holt in Christiania, of Dr. Johannsenebenda, of Moro, of Lameris and Harrefeld. The second International Milk Congress in Paris called attention to the fact that milk containing streptococci is dangerous for grown up persons and children.

The different secretions in udder inflammations will be found injurious to health. The individual forms of mastitis are not always sufficiently considered and discriminated. Sufficient means are not always at hand in a clinical examination as to whether the milk given by a bad udder and the bacteria contained therein are injurious to health, and perhaps bacteriological culture and inoculation experiments are out of the question on practical grounds. Such milk, as already said, cannot be made harmless by cooking, so we must conclude *that the milk of all cows with udder illnesses is absolutely unsuitable for the use of mankind.*

2. Injurious matter in milk may have its cause in accidental impurities, as contagion from man through the vessels, through the water they are washed in, through the milker or other person. Many of the pathogenic micro-organisms retain their vitality for a long time in raw milk, and for others it is a noticeable nourishing medium. Thus the so-called milk epidemics, Asiatic cholera, typhus, and diphtheritis are spread through milk. Also scarlatina, erysipelas, and syphilis can be conveyed by the use of raw milk.—*Berliner Thierärzt Woch.*

G. M.

(To be continued.)

CONTAGIOUS DISEASES OF FARM ANIMALS, WITH SPECIAL REFERENCE TO GLANDERS AED ANTHRAX.

By Prof. PENBERTHY.*

DISCUSSION.

Sir THOMAS H. ELLIOTT, K.C.B., Permanent under Secretary of the Board of Agriculture, in opening the discussion, said that before proceeding to refer to the paper which had been read he should like to congratutate the Secretary and the Executive of the Club on their choice of the paper for the opening session, because undoubtedly the diseases of farm stock constituted a subject of the greatest importance to agriculturists as a whole, as well as a very important part of the work of the Board of Agriculture. It was very useful at a gathering of representative farmers to endeavour to have a kind of stock-taking, and to review generally their position in regard to the diseases of farm stock. The great danger in considering questions connected with the diseases of animals always was that local, temporary, and personal considerations sometimes had more importance given to them than they really deserved. The Club, he thought, was very fortunate indeed in having such a paper read before it, and there was a singular appropriateness that it should be by a member of the veterinary profession, inasmuch as without the researches and the skill in drawing deductions of those who gave their lives to the practice of the veterinary art, all operations against disease would be of no avail. Any sound operations must be based upon a sound appreciation of the scientific aspects of a disease. Therefore it was to him a great personal pleasure that the paper had been read by a well known member of the veterinary profession. Professor Penberthy had been kind enough to refer to the work of the Board in very cordial terms. He thought, in a way, that the Board deserved a certain

*At a meeting of the Farmers' Club, Nov. 4th.

amount of credit, but whatever successes it had obtained would not have been possible without a very considerable measure of support in other directions. He should like, first of all, to say that they were very largely dependent upon the efficiency, zeal, and good will of the Executive Committee of Local Authorities, the police forces of Local Authorities, and particularly to the energy and goodwill of the chief constables. It was nearly always the case that where there was an efficient local authority, the best results as regards the extermination of disease in any given area were obtained. On behalf of the Board he would like to say that they always felt they were practically dependent upon the goodwill and co-operation of the farmers themselves. Gentlemen who represented the farming industry (to whom the success or failure of that industry was of the very greatest personal importance) could indicate to their fellow farmers that if they desired the success of the Board in stamping out disease, the only way was to co-operate with the Board, to see that the disease was promply reported, and that all the instructions of the Local Authorities and of the Board with regard to cleansing and disinfection were promptly carried out. If that were only done, it would go a long way towards making the efforts of the Board a success. Probably no one present would think of neglecting diseases of the kind which had been referred to, but it was well known that there were men who, though not usually wilful, from a sort of negligence and lack of energy, failed to do what they ought. For instance, they would go into the market and see a cheap lot of pigs; they would not ask themselves whether they were nasty or not, but buy them and take them home. They would then be put with a lot of other pigs, and a serious outbreak of disease a few weeks afterwards resulted, causing enormous loss and inconvenience to all the farmers in the district What he asked on behalf of the Board was for a healthy expression of public opinion in agricultural circles on this point. The Board did what it could, but he was sure its efforts on all these things could be greatly assisted by the help and support of members of the Club in various districts. He perhaps might be allowed to make a few remarks as to the officers of the Board, because he was not personally closely associated with the administration of the Acts. When he joined the Board in 1892 there was a very large staff of officers, and some of them had no experience at all. Now, however, there was a staff of men who, for the best part of their lives, had been giving themselves up to this work, who had the opportunity of studying all the facts and figures as regards disease in every part of the country, and who were becoming experts available for work of this kind. They had had great men in the past. Prof. Penberthy, he knew, would appreciate any reference to Prof. Simonds, Sir George Brown, and Mr. Cope, all of whom were pioneers in the work; but he was glad to say that their places were being filled. They had now a chief veterinary officer who had made this question not only his official duty in office hours, but his private and personal hobby. He had known him to sit up all night with a cow which was about to abort, which was certainly not a very pleasant thing to do; but he only mentioned it in order to show how great was the professional zeal. He was quite sure that in Mr. Stockman they had an officer who would carry on the flag still further, and bring them to even a more advanced point as regards the stamping out of disease in the country. Prof. Penberthy would recognise that his paper was by no means a complete one, for although it was true that many diseases had been stamped out, unfortunately it was true that many diseases still remained. There was one disease which had been stamped out, for which he thought they had scarcely received any credit, namely, the disease which rejoiced in the somewhat long name of epizootic lymphangitis, of which a few cases had been brought into the country. The disease was not really known even to the veterinary profession in this country, so that the Board had worked under very great difficulties. Happily, however, the means and the staff were available. He thought it was not untrue to say that had the cases of epizootic lymphangitis which were brought into this country at the end of the South African War, been brought in 50 years ago, the disease might have been added to the list of those which were now chronic. Fortunately, however, it had been nipped in the bud– if he might use a rather unfortunate metaphor—and therefore prevented from coming into prominence. There were two diseases to which Prof. Penberthy had not alluded, but which were of enormous importance, namely tuberculosis and the contagious abortion of cattle. Personally, he believed, that there was more prospect in their being able to be of service to farmers in connection with the stoppage of contagious abortion than possibly in any other direction. A committee was at work dealing with the matter, and great advance had been made in a knowledge of the subject, which he hoped might eventually reach a point which would enable operations to be commenced against it in the field. Of course, it was a difficult question, and it would mean time, expense, loss and inconvenience to a certain section of the agricultural community; but if they could get rid of the pest he believed a very great national agricultural service would be performed. He would not refer to the question of tuberculosis, for it was an enormously difficult question, and one which, in his judgment, was so large that it could not be tackled as a whole. Some people had loosely said "Oh! schedule it under the Contagious Diseases (Animals) Act." That was a very pretty phrase, but one had to think more of what was meant by scheduling disease under that Act. He thought the wiser plan probably would be to approach, as it were, that fortress very carefully, by degrees; and he thought probably if by dealing more efficiently with cases of tuberculosis of the udder, and bringing the law into a more satisfactory condition —getting rid of the little local Acts that bothered not only agriculturists but also those officers of the Board who were engaged in these matters—a beginning might be made. If once a beginning were made they would then know more clearly in what direction to advance. The subject was inexhaustible, and it was a most interesting and valuable one so far as agriculturists were concerned. In conclusion, he asked the members to give their cordial thanks to Prof. Penberthy for his paper, and to express the hope that it would not be the last time the subject would be considered at the Farmers' Club under his guidance.

Mr. B. St. John Ackers, in seconding the vote of thanks, expressed pleasure that the permanent head of the Board of Agriculture was present. Sir Thomas Elliott had given them hope that in the future certain diseases would engage the attention of the Board, and might in time be eradicated. They asked that evening that those diseases which had for so long received the attention of farmers and the Board of Agriculture should as far as possible be stamped out without delay, and that energetic measures should be taken. There was practically nothing in the paper with which all present did not agree. He, personally, agreed with everything that had been said as to glanders. The great point which Professor Penberthy had taken, and which they all desired to support, was the importance of stamping out glanders in the districts where it was so much concentrated, such as London, Glasgow and other places, and that energetic measures should be seriously taken by all concerned in the government of the country. He believed every possible help was received from the Board of Agriculture, but behind that body there was the Treasury. Deputations had waited upon the Treasury, but the Treasury did not consider the subject sufficiently important to receive a national grant, but

that the work should be done by local authorities. Now he thought it was a national matter, for it was of great consequence to the farming interests of the country, of great consequence to the health of human beings, and was responsible for more deaths than ever came to public knowledge. It was a disease which did great harm to agriculturists, to the motive power of towns, and might be a very serious national danger in case of a future war. We wanted to have our horses and other animals—especially the former—free from the disease, and the Board of Agriculture, whom they looked upon as friends, were seriously asked to again press the matter upon the Treasury. The disease would certainly be stamped out much sooner and much more successfully if done out of Imperial funds. With regard to anthrax, there was only one point on which he differed from Professor Penberthy, and that was in the use of the word "byres." He would like to ask whether that word meant cow-sheds. If it did, he wished that word could be substituted for the other, inasmuch as it would be understood throughout the country. With regard to what the Professor said about infection, he desired to know how long it was considered the infection could last? It was the general belief that the infection of anthrax lasted for years, and that if one buried an animal which had suffered from it in the corner of a field, then railed it round, and no live animal was allowed there for some years, yet if at the end of that time live animals happened to get in and go over the place they would become infected by anthrax. Would Professor Penberthy reassure them on the point, and give his opinion of how long the infection lasted? Then again, how could one tell that an animal which was said to have died from quarter-evil had not died from anthrax? If the veterinary surgeon had not been called in how were they to know that the animal did die from quarter-evil and not from anthrax? He further asked whether something more could not be done in the way of preventing the spread of the disease by woolsorters and those trading in hides? In the course of the paper it was stated that people who dealt in hides in a manufacturing way were allowed to send their refuse away from their own part into the country, and that the bacillus had been found on the banks of the streams below. Surely that was a matter which came within the province of the Board of Agriculture or some other authority.

Lord Northbrook said that, as a visitor he desired to express his hearty thanks to the Farmers' Club for their kindness and courtesy in inviting him and other chairmen of Diseases of Animals Committees to be present on that very interesting occasion. He hardly felt that he was qualified to express an opinion which would be of any value on such very technical matters, but he would like to say a few words on the question of anthrax, to the infection of which Mr. St. John Ackers had referred. To him it appeared that the tracing of the source of the disease was the very great difficulty experienced in this country. In Hampshire, under advice, they had taken the precaution of always having, when an animal died from anthrax, a report of what that animal had been fed on during the previous months, and also as to whether any other animals had been bought and brought on to the farm. There had been two cases to his knowledge, one being a heifer which had died of anthrax. She was bred on the farm, and so far as he could ascertain no animals had been brought there, no foreign feeding stuffs had been used, no bone manure employed. They were not able to prove that the animal had been exposed to foreign infection of any sort. Such cases as that were puzzling. Sometimes accidents or misfortunes occurred. It had been found that through an error of judgment a veterinary inspector had very improperly, cut open an animal which had died from anthrax, and had allowed the blood to come out. Fortunately in such instances no other case of anthrax had occurred there up to the present. In other cases they had been able to trace the infection of anthrax in the way Professor Penberthy had mentioned, viz., when a diseased animal had been cut up and given to pigs, in which event the pigs had contracted anthrax. It appeared to him that the great difficulty against which they had to contend was where animals had apparently been in contact with the disease and had not contracted it. On the other hand there were isolated districts in which no case of anthrax had ever previously occurred, where the animals had not been subjected to infection from living animals, and had never had the chance of getting the disease from foreign produce brought on the farm, and yet cases occurred there. On the question of diagnosis, dealt with by Mr. St. John Ackers, he thought the course pursued in Hampshire enabled them generally to form a very just opinion. The instructions to farmers, which were generally attended to, were that when any animal suddenly died anthrax was to be presumed. In fact, in that case notice had to be given, the inspector went to the farm and took a sample of the blood, or cut off the ear, or such portion which was necessary, and sent it to London for the opinion of the Board of Agriculture. In that way he thought a fair diagnosis of what was true anthrax or not was obtained. As to Sir Thomas Elliott's remarks on diseases of the udder of the cow, all admitted that public opinion demanded that the question of pure milk must be dealt with. All admitted that a proper inspection of dairies and dairy herds in order to see the cows had no clinical symptoms of tuberculosis was only right. If the matter could be dealt with at once by the Board of Agriculture he believed it would be a very good thing, for it was much more to be preferred that the matter be taken in hand by that body than by the Local Government Board.

Mr. Hobbs, as an owner of one of the largest herds of shorthorns in England, and rather a large flock of sheep, said he was glad to hear Sir Thomas Elliott's remarks, more particularly with regard to that most awful disease contagious abortion, which he believed was very much more general amongst our herds and flocks than was usually imagined. If the Board of Agriculture would extend their good offices to farmers by dealing with contagious abortion they would be conferring a great benefit on agriculture generally. Another matter deserving careful consideration was the effective stamping out of sheep scab. The more stringent the regulations of the Board, and the more severely they were carried out, the more good would be done for the stock-owners of the country.

Mr. Street commented upon the loss of animals imported by foreign countries from this country. Even when they had passed the tuberculin test on leaving these shores they failed to pass it over there and had to be slaughtered. He would be very thankful indeed if something could be done to prevent the recurrence of such things in the future. Then, again, he would like to know whether glanders and farcy were the same thing? He bore testimony to the fact that even the spilling of blood from an animal which had suffered from anthrax was a source of contagion. When the bodies however, were immediately buried and covered with quicklime, he had found there was no recurrence of the disease.

Mr. W. Fitzherbert Brockholes supported the views of Lord Northbrook. In Lancashire whenever a case of anthrax occurred a veterinary surgeon went and made every possible enquiry as to the food that had been given to the animals, and tried in every way to trace the causes of the outbreak. If that course were adopted in every county in England they might get more satisfactory clues as to some of the causes of the disease, and so check the spread of it.

Mr. C. H. W. Dixon supported the last speaker. They were still completely at sea as to some of the causes of anthrax, and if the Board of Agriculture could suggest

to the local authorities some uniform method of procedure, such as the sending of returns to them, it might have the effect of stamping out this dire disease. Unfortunately, not only infected swine were brought into the markets and sold, but cows which had aborted prematurely, with the result that abortion occurred in the herds into which they were introduced.

Mr. H. C. GARDNER considered farmers now know nearly all they wanted to know about anthrax. In Worcestershire they adopted more drastic treatment than simply burying the bodies of animals certified to have suffered from anthrax; they burnt them, and this was done as near as possible to the spot where they died. The farmers in his county thought that veterinary surgeons had anthrax on the brain, and felt that more light and improved diagnosis was wanted on the subject.

Mr. GEORGE FISKE would like to have heard more on the question of tuberculosis in cows. He expressed the hope that the greatest care would be taken in condemning cows that were apparently healthy, and which had nothing wrong with their udders. He knew that a great deal had to do with the temperature of cows. As it varied so greatly it seemed to him to be a very uncertain test. As to glanders, if under the new system the compensation was to be paid in the locality and not by the Imperial Exchequer, he hoped the London County Council would be looked after closer than they now were, for in the county he came from, namely, Suffolk, they could nearly always prove that where glanders existed in any animals, those animals had come from London.

Mr. HASLER having related an instance of the recent death of a heifer on his farm from anthrax, and the mystery surrounding the cause of it, deprecated the custom of carrying hides as cargo on vessels in which there were feeding stuffs for cattle in the hold, because if the germs were in the hides, naturally all sorts of possibilities in the way of infection were open.

Mr. S. KIDNER said a good deal had been said about anthrax and the way the Act should be administered by those elected on the Executive of the County Councils. Prof. Penberthy had said that after decomposition began the anthrax germ was destroyed. If that were the case it was difficult for an ordinary man to see why any special precautions should be taken other than simply burying the carcases. In Somerset they buried them in lime.

The CHAIRMAN, before calling upon Prof. Penberthy to reply, desired to ask a question on the subject of anthrax and burying. When he was in France in 1878 studying under an agricultural Professor he well remembered that the Professor maintained that if a carcase was buried in a field it was dangerous, because the worms would bring the spores on bacilli to the surface in after years. Was that view still held?

The resolution of thanks was then put and carried unanimously.

Prof. PENBERTHY, in reply, said he had been acting under instructions in dealing with anthrax and glanders only. He assured Sir Thomas Elliott that he realised very thoroughly the importance of dealing with tuberculosis and contagious abortion, and he joined in the hope that active work, with good results, would be very soon announced. He had no idea of any early decline of the Board of Agriculture for want of work to do in stamping out contagious diseases of animals, even other than those which were now scheduled under the Contagious Diseases (Animals) Acts. As to the opinion that the word "cowshed" should be used in preference to "byre," the latter word had one advantage which was realised by the Board of Agriculture—not that it was Scotch, but that it included places inhabited by oxen and bulls as well as cows, and inasmuch as all those animals were liable to anthrax it was, perhaps, a better and more comprehensive term than cowsheds.

Replying to the question as to the period during which the infection might live and remain effective, that had not been measured yet. It was fifty years ago since the anthrax bacillus was first thoroughly demonstrated, and it was now taken to be the germ of whose life history more was known by them than any other. He had kept spores for twenty years, and at the end of that time they had still remained effective. Sunlight had a marvellously injurious effect, even on spores, just in the same way that natural conditions overcome other bacilli. When one realised the power of multiplication of the organism, the circumstances which existed at present showed that natural conditions were those which were opposed to the life of the spore. That, he thought, would answer several of the questions which had been put in the course of the discussion. In the living carcase there were no spores found, but just before death the blood became filled with rod-like bodies, which resisted putrefaction for a short time, but when putrefaction was complete then all the bacilli in the carcase were dead and inert. If the carcase were opened (which, of course, it never should be) it would be found that the bacilli had gone in the internal parts, because putrefaction began there before it did on the outer parts, owing to the higher temperature. But if the blood was spilled and the bacilli got access to the air, the free oxygen in the air allowed the formation of spores, which, under favourable circumstances, might live for a period of years. With regard to what Mr. St. John Ackers asked about quarter evil, he had no doubt that in the earlier reporting a good many cases of quarter evil were returned as anthrax. The Government, however, provided the machinery for determining what an animal died from, whether from blackwater, or quarter evil and suchlike. As regards the question of effluent from factories, he thought it was the duty of some Government authority to see that no effluent containing anthrax bacilli was discharged. With reference to Lord Northbrook's remarks, the difficulty of tracing anthrax had always been felt, and he was afraid it would remain so. Even a bit of hay would carry anthrax germs sufficient to infect half-a-dozen animals. All they could do was to try to prevent the importation of germs, or, if they were imported, to endeavour, with the means at their disposal, to prevent them from gaining access to the animals. Answering another question, he could not tell why it was an animal did not react to tuberculin on this side of the Atlantic, and yet did so on its arrival at, say, Buenos Ayres.

As to why anthrax bacilli appeared to persist in some places, he would say that that was because the spores were formed there, and were got at by susceptible animals, or there was a further supply constantly coming to the place. It might be explained in two ways. If he wanted to account for the recurrence of anthrax in a meadow through which a river ran, and into which the effluent of a wool factory was carried, he should in all probability say the anthrax was brought in that way. If he could trace nothing, yet knew as a matter of fact that two or three animals had been cut up at some previous time—it did not matter how long back—he should say that in all probability some spores had been distributed.

Six Horses Burned.

Early on Saturday morning, Nov. 9th, an alarming fire broke out at the residence of Mr. G. Hill, veterinary surgeon, Rosemount, Uddingston, Glasgow, considerable damage being done. The fire broke out in the stables at the side of the house. The Uddingston Brigade, being summoned, were soon on the scene, and with a good supply of water were able to keep the fire from spreading to the adjoining workshops. The stable was completely gutted, six valuable horses being burned to death. Mr. Hill was severely burned about the face and arms while pluckily assisting to get three of the horses out. —*L. S. J.*

THE CENTRAL VETERINARY MEDICAL SOCIETY.

PRESIDENTIAL ADDRESS—J. WILLETT, M.R.C.V.S.*

Gentlemen,—I must again thank you for the honour you have done me in appointing me your President for the ensuing year. it is the greatest honour you can bestow, but I feel your choice might have fallen on many older and abler Fellows of this Society.

The position is one I felt some diffidence in accepting, more especially as I am following such an ideal President as Major Butler, and nothing would have given me greater pleasure than to see him again occupying this chair for another year, but he, for no doubt good reasons, is unable to accept our invitation for a further term of office. My hesitation was removed I found that during my year of office I should have the aid and assistance of two such tried and trusty officers as our treasurer, Mr. Stroud, and our energetic Secretary, Mr. MacCormack, whose good qualities are so well known and appreciated by you all, and with their help I trust that my year of office may be in some measure successful, and that when I vacate the chair you will be able to say that I have at least tried to follow the high examples set by my predecessors in upholding the traditions and promoting the welfare of this Society.

It is usual at this or the next meeting for your new president to read an address dealing with topics of the day affecting the interests of our Society in particular, and the profession in general. The most important question in our minds at the present time is the Bill which the Council of the Royal College of Veterinary Surgeons is about to promote in Parliament. We little thought when we listened to Major Butler's speech before this Society, and then circulated among the other veterinary societies last year, that his remarks were soon to bear fruit, but the time was evidently ripe, and the and the profession (or rather those who were not too apathetic to reply) answered with no uncertain voice in favour of an Annual Registration Fee, with the result that the Council is proceeding immediately to draft a new Bill, the proposed Clauses of which have already been published in our veterinary papers, and are no doubt well known to you all, so I need not dwell on them to-night. We have often heard the Council blamed that they did not do much, but their detractors can hardly say that they are proving dilatory in this matter, and I think Mr. Garnett is deserving of every praise for the whole-hearted manner in which he has devoted his time and energy to this question, and the result of the voting must have been a source of gratification to him.

Now what are the benefits we hope to derive from this new Act, with its accompanying annual fee. I can hear some pessimistic members say, "How is this going to benefit me? What am I going to have in return for my guinea a year?" Well, gentlemen, I doubt if it will immediately be of direct benefit to any individual member, but indirectly we should all benefit in time. This annual fee may seem hard and unnecessary to some, more especially to those members practising in remote country districts, whose daily life is one routine from year to year, but still we all ought to be willing to make some sacrifice to support the College who gave us our degree, and not let it depend on examination fees from students for the greater part of its income. We expect it to guard our interests, and we are told that without more income that the funds are inadequate to properly carry this out.

How may this money be spent? We hope and expect to see a greater number of prosecutions instituted against those gentry who are daily usurping our qualifications and filching our fees. Apropos of this, I noticed with pleasure that during the last two months two individuals were successfully prosecuted for posing as members of our profession, and what is more to the point, the police court proceedings were well reported in the papers; this cannot but have a deterrent effect on other offenders, besides opening the eyes of the general public.

Then again, the Library and Museum should be brought up to date, and be made worthy of a profession like ours.

There is also a great field for original research, and much ought to be done to foster it by an annual grant, and how could the surplus funds be better applied?

And last, but not least, many members of our Council come long distances several times each year at great expense, and often great inconvenience and loss of time in their several practices, and surely if our funds are sufficient we ought not to grudge the payment of their reasonable travelling expenses.

I must confess I was disappointed to read that a clause for the exemption of our members from service on juries could not be embodied in the proposed new Bill. This is to be regretted, as it is a source of great annoyance and loss to some of our busy members, more especially in the country, where no assistant is kept. In some districts even now we are not placed on the list, and here is the anomaly and one which I hope will soon be altered so that we may be placed on the same footing as other professions.

This Bill will, I believe, mark the commencement of a new era for our profession, and despite the increased competition caused by the "motor mania" I am optimistic enough to think that this has reached its level, and that the demand for horse drawn vehicles will increase.

As to public appointments, we are gradually coming into our own, as the eyes of the general public are more and more focussed on us year by year and our capabilities are being properly recognised, so that the appointments formerly given to others (but for which we are specially trained and adapted) are now being secured by our profession.

This Society is not only a scientific debating Society but also a mutual benefit Society. The amount of good it does by promoting good fellowship between its members is hardly realised, and often a member, when treating a difficult case, receives valuable aid and advice by a discussion with his friends at our meetings.

There is one other matter I should like to touch upon, that is the lack of *esprit de corps* shown by some members of our profession, and the tendency to undercut each other in fees. I refer more especially to contracts with Municipal and Borough Councils. I should like to see fixed uniform fees, under which it would be unprofessional for any member to tender, as at present they are in many instances so cut down as to become absolutely unprofitable; or better still, a combination of all the members of each particular district to form a deputation to the local Council, requesting that the appointment of veterinary surgeon should be at a fixed salary; this is what takes place in other professions, then why not in ours? The Councils are not to blame in taking the lowest tender, it is more or less their duty, and it is natural that they should only value our services at the price we put upon them.

I ask your permission to quote two examples affecting the sister profession that came under my notice. In a certain district of North Wales the local council thought the fees charged by their medical officer too high, and tried to reduce them, he resigned in protest, then six or seven other doctors were approached, but they all re-

* At the meeting on November 7th.

fused to take over the duties at less fees, finally the council reappointed their doctor at the same fees he had previously charged.

The second instance, a certain borough wished to reduce their medical officer of health's salary from £600 a year to £500; he resigned, and they advertised for another, but so strongly was their action deprecated by the medical profession, that there were only four applications for the post, consequently the medical officer of health was reappointed at the existing salary.

In conclusion, may I remind you at this, the commencement of a new year for the Society, that I am depending upon you for papers and morbid specimens for the coming meetings, and I hope some of you will come forward with these, that our discussions may be both interesting and instructive.

THE TREATMENT OF BACTERIAL INFECTIONS BY VACCINES.

By GEORGE T. WESTERN, M.A., M.D., B.C. Cantab.

(From the Inoculation Department of the London Hospital.)

While every new, or comparatively new, departure from recognised lines of treatment, involving, as it must do, issues of such vital importance to mankind, is justly regarded by the profession at large from a somewhat conservative standpoint, it is probable that none has been surrounded at its outset by more misapprehension than the one under consideration. For this there would seem to be two main reasons, first, the alarm that naturally resulted from certain errors in the earlier application of the principles involved; and secondly, a resulting unwillingness to reconsider the subject in the light of later knowledge.

It is proposed in the present paper to outline briefly the history of protective and curative inoculations; to discuss the recent advances that have helped to put the question upon a more scientific basis; and to present a critical survey of the results of treatment in 250 cases.

The principle of acquiring protection against a specific poison by means of introducing into the system small doses of that poison, although originated by Mithridates so long ago as B.C. 70, did not until many centuries later have any application to what may be called organised poisons. The modern methods of *specific* prophylaxis and cure may be considered to have emanated from the introduction of the practice of variolation, a practice, however, associated with so much risk, both to the patient and to the community, that it had to give way to the safer method introduced by Jenner in 1797—namely, inoculation by an attenuated virus in the form of calf lymph.

The brilliant results following Jennerian vaccination led to attempts at prophylaxis on similar lines in the case of other diseases. Willems in 1850 attempted to produce protection against bovine pleuro-pneumonia, by inoculation with the virus but with indifferent success.

It was not until 1880 that Pasteur, working with pure cultures of the microbes of chicken cholera, rouget, and anthrax, placed the matter on a scientific basis. In the case of rabies also he was able to elaborate an efficient system of prophylactic inoculations, although the virus of this disease still remains undetermined. In all of these cases the material used for inoculation was an attenuated virus, this attenuation being brought about by various means.

In 1887 it was shown by Salmon and Smith and others that specific immunity can be induced by the inoculation of a virus killed by heat, chemicals, etc., and thus all risks of increase of virulence and resulting fatal infection were abolished, and so the method became applicable to mankind.

The important discovery of antitoxin by Behring and Kitasato in 1890 led to the belief that in immune serum a panacea had been found against all infections, a belief, however, which was not justified by subsequent investigation. In recent years, therefore, a return has been made to the principle of active rather than passive immunisation. This method was first applied to man with satisfactory results by Ferran and Haffkine in the case of Asiatic cholera. Later, protective inoculation with killed cultures was carried out in the case of enteric fever by Pfeiffer and Kolle, and by Wright and Semple with good results. The possibility of protective inoculation against bubonic plague has been worked on by Haffkine and others with results that promise some success in the future.

CURATIVE VACCINATION.

The first attempt to extend the scope of vaccination to those cases where infection was already an established fact was made by Robert Koch. Taking into consideration the great chronicity of many localised tuberculous lesions he conceived that it might be possible from cultures of the tubercle bacillus to prepare a vaccine which would so raise the resistance of the inoculated subjects that they might not only gain an acquired immunity against infection with the tubercle bacillus but might even, where an infection was already present, be enabled to overcome that infection. In October, 1890, at the Berlin Medical Congress, he made the announcement that he had prepared a substance (the consistence of which was not published until later) which had a curative action when injected into the subcutaneous tissues of man or animals infected with tuberculosis. In a preliminary paper dealing with the subject he recommended the injection of 0·01 cubic centimetre of the fluid in cases of localised tuberculosis other than pulmonary tubercle. In the latter he recommends doses of 0·001 cubic centimetre. The effects of such an injection were described as: (*a*) at the site of inoculation, *nil*; (*b*) at the seat of disease, an acute hyperæmia, swelling, and exudation, followed by absorption of the diseased tissues; (*c*) general malaise, pyrexia (from 102° to 106° F.), headache, etc.; and (*d*) tubercle bacilli in the sputum were said to become degenerate, as evidenced by thinning and beading. The publication of this paper was immediately followed by an extensive trial being given to the new substance both in Germany and in England. Doubtless many cases were subjected to treatment which in reality were quite unsuitable, and hopeless from the first. However, it was not long before cases were recorded of disease which from being chronic became acute, and cases of localised disease which became acutely disseminated as a sequel to the injections. So great indeed was the reaction of opinion that by the end of 1891 the greater number of those who had taken up the new treatment had already lost faith in it, and at many hospitals its use was even forbidden. The fluid, to which the name of "tuberculin" (now known as "old tuberculin") was given, was prepared thus. Bacilli were grown for from six to eight weeks in a slightly alkaline veal broth containing 1 per cent. of peptone and from 4 to 5 per cent. of glycerine. The liquid was then evaporated to a tenth of its bulk and filtered through porcelain. This filtrate constituted the old tuberculin. It will be seen, therefore, that this fluid contained only such toxic products of the tubercle bacillus as were soluble without disintegrating the micro-organisms, and therefore could not give rise to an active bactericidal immunity. Koch, however, and others were now working to separate from this tuberculin the active immunising principle and also to free it from the noxious constituents.

Klebs in 1891 prepared from Koch's tuberculin, by precipitation with platinic chloride, a substance which he called "tuberculocidin." This, he claimed, was with-

out the depressant effect of tuberculin but still caused degeneration of the bacilli. Large doses, he also said, by causing a rapid disintegration of the tuberculous tissues, produced an elevation of temperature by a form of auto-inoculation with tuberculous material.

It was not until 1897 that Koch announced his discovery of a further tuberculin known as the "new tuberculin," or T.R. Its preparation is as follows. Cultures grown as for old tuberculin are ground up in distilled water in agate mortars. The first quantity of the resulting fluid is decanted and constitutes tuberculin Oberer (T.O.). Fresh quantities of water are added and the trituration is repeated until no solid residue remains. This suspension of the comminuted bacilli is known as "new tuberculin" (T.R); and 40 per cent. of glycerine is added until 1 cubic centimetre of the fluid contains 10 milligrammes of the dried powder. This tuberculin, therefore, in so far as it contains all the constituents of bacilli with the exception of the soluble exo-toxins eliminated in the T.O., should on injection give rise to the formation of active bactericidal substances. The dose of this tuberculin which was recommended varied from 0·25 to 0·5 milligramme. In spite of the distrust of tuberculin still present due to the failure in 1890 a fair trial was given to this new product. Owing, however, to the fact that the dosage was too great, and that the effects could not be determined with sufficient accuracy, this also led to disappointing results.

The opsonic index as a guide to inoculation.—In 1902 a fresh impetus was given to the exploitation of vaccines in the treatment of disease by the publication of a series of observations by Professor A. E. Wright. He showed that the blood of patients who are the subjects of acne, sycosis, or furunculosis is characterised by a defective phagocytic power for the staphylococcus pyogenes. He also showed that the cure of these bacterial infections can, in almost every case, be achieved by the inoculation of appropriate quantities of sterilised staphylococcus cultures, and, further, that the cure is associated with the acquirement of an increased phagocytic power for the staphylococcus pyogenes. It was also shown that human serum exerts no bactericidal action on the staphyloccus pyogenes. It was, however, still a matter of uncertainty whether the blood fluids performed any active part in phagocytosis. Following on this, Wright and Douglas, by using a modification of the method of measuring the phagocytic power of the blood devised by Leishman, showed that phagocytes had no power of ingesting staphylococci except when serum or plasma was present; and further, that the power exerted by the blood fluid was not a stimulation of the phagocytes, but a modification in some way of the micro-organisms, which made them a fit prey for the phagocytes. To the substance which brings about this modification they gave the name "opsonin." In a further paper, published in 1904, the same authors detailed another series of experiments in which they showed that the opsonic action of the blood fluids is exerted not exclusively upon the staphylococcus pyogenes, but also upon the bacillus pestis, the micrococcus Melitensis, the diplococcus pneumoniæ of Frænkel, the bacillus coli, the bacillus dysenteriæ (Shiga), the bacillus anthracis, the bacillus typhosus, and the vibrio choleræ Asiaticæ. And, further, they showed that the increased phagocytic power which accompanies successful immunisation against the staphylococcus pyogenes is dependent upon an elaboration of opsonins in the system of the inoculated patient. In a second paper, published in the same year, the increase in the opsonic power is again clearly shown to follow the injection of an appropriate vaccine in cases of infection with the tubercle bacillus or staphylococcus pyogenes. It was also shown that an increase in opsonic index was associated with clinical improvement, and conversely a fall in the opsonic index was associated with an exacerbation of the infection. From this time, therefore, the opsonic index has been used as a guide to the inoculation of vaccines, the curve of active immunity obtained being an indication both as to suitability of dose and as to the best time for reinoculating. By this means it has been shown that the dosage of Koch's tuberculins as originally recommended is far in excess of what may with safety and benefit be employed. During the last three years the main facts demonstrated by Wright and Douglas have been confirmed by numerous workers, and many cases treated on the lines indicated have been published.—*The Lancet.*

UNION OF SANITARY AUTHORITIES.

A preliminary conference of representatives of sanitary committees of county and borough councils and port sanitary authorities of England and Wales was held in Caxton Hall on Friday, Nov. 15 to consider the establishment of a permanent union of such authorities for the authority of uniformity of action in administration of matters relating to public health. The movement, originated in Newcastle-on-Tyne, has been endorsed by the Sanitary Committee of that city, and has the support of sanitary authorities in Northumberland and Durham. Eighty authorities were represented at the meeting.

Mr. H. W. Newton, Chairman of the Sanitary Committee of the Newcastle Corporation, was voted to the chair, and, in opening the proceedings, said the sanitary authorities of the country were familiar with the difficulties to be encountered in dealing with health problems. Individual authorities, actuated by zeal and wide knowledge, were discouraged in their efforts, due in a great measure to the absence of community of thought and of unity of action among those engaged in the work of practical sanitation. Much good work and the results of valuable experience had been lost to the country through the absence of union. Authorities might work with the highest ideals, but had been restricted by regulations framed by those who had little knowledge of the practical side of questions involved or local conditions. County and urban authorities should come to an understanding upon questions upon which they were mutually interested, and should cease from working at cross purposes, as frequently they had worked in the past. They had a common object in view, the promotion of the public health, and this could be best accomplished by demanding legislation to secure as far as practicable uniformity of action for all districts, insisting that the nation should indemnify those who were required to make sacrifices for the common good. Many important matters required prompt action, but without combination attempts to deal with them would be hopeless. The proposed union of sanitary authorities would not be opposed to any kindred institution in existence; on the contrary, it would be helpful to others who, with similar objects in view, did not specialise public health. It would infuse a new spirit into our local government and national administration, it would supply an important link in the public health service, it would by discussion bring about unity of aim and co-ordination of effort, and its functions would be consultative, advisory, and educational on matters of public health. (Cheers.) He concluded by moving a resolution approving "of the establishment of a union of the sanitary authorities of England and Wales for the purpose of promoting the public health interests of the nation; and that the said union shall have for its immediate objects—(*a*) To secure, as far as may be practicable, harmony of interests and uniformity of action among sanitary authorities in general on matters relating to the public health; (*b*) to stimulate and

concentrate effort for the purpose of effecting necessary sanitary reforms, whether for the public weal or the benefit of individual sanitary districts ; (*c*) to encourage and promote the study of practical hygiene, and to educate opinion with respect to the national as well as the local importance of public health work in general ; (*d*) to consider the different conditions and circumstances, general or local, whereby disease is liable to be caused to man and, as far as may be, to obtain their removal."

The MAYOR of RIPON, in seconding the resolution, said he did not think that in its intended work the union would trench upon the work of existing institutions. The aim would be to attain uniformity at a high standard ; but, at the same time, care should be taken not to ask for new powers where old powers could be used. It should be remembered that all authorities were not large, powerful, and wealthy, so that it was essential to preserve an amount of flexibility which would spare poorer communities from burdens heavier than they could bear. The functions of the association would be mainly advisory, and he hoped it would not enter the field of politics. (Hear, hear.)

Dr. HUTTING (Chairman of the Health Committee of Liverpool) said his committee had come unanimously to the conclusion that anything in the shape of multiplication of what might be called amateur authorities associated with the administration of public health laws was undesirable (Hear, hear.) Whatever its title might be, the union would not be an executive, but an advisory, body ; it would have no powers that were not possessed by existing associations, which were doing admirable work. There were six associations, representing respectively municipal corporations, borough councils, county councils, urban and rural district councils, and port sanitary authorities, and some of these had been responsible in promoting and largely instrumental in passing amendments of the law in relation to importation and sale of food. They had come to the conclusion in Liverpool that it was not desirable to constitute another amateur authority in any shape ; nevertheless, they fully recognised the high objects sought to be attained, and, further, they recognised that the Local Government Board, practically the supreme health authority, needed strengthening. Therefore, he moved an amendment the adoption of which might have good practical result—to substitute after "establishment" the words "of a special department of the Local Government Board to deal with all questions relating to public health, upon which representatives of the various local authorities shall be appointed ; and that a copy of this resolution be sent to the various associations, with a request that they will unite in asking the Local Government Board to constitute a department for this purpose."

Dr. HOPE (officer of health for Liverpool) seconded the amendment.

Dr. BROWN (West Bromwich) thought there should be a national health authority quite apart from the Local Government Board.

Alderman HOLDER (Hull) said the fact of there being so many associations seemed to point to the need of some consolidated authority upon which each could be represented. At present there was the danger that when the Local Government Board was approached on any subject the Board would play one Association against another. (Hear, hear.) He saw in the original resolution the germ that might grow into a Sanitary Parliament or Health University. (Hear, hear.)

Mr. MARR (Sanitary Committee of Manchester) said he with others had insufficient information as to the object in view. It was obvious that the proposed organization could not claim supreme authority. There was a good deal to be said for the formation of an association on the lines of the Municipal Corporations Association, which did not give quite enough attention to health matters. There should be some pronouncement from the conveners of the meeting as to the intention. The opinion in Manchester was that another association was not wanted, but some good might result from the formation of a small council or committee with power to summon a meeting to consider any matter of interest in regard to public health administration (Hear, hear.)

Mr. PICKMERE (town clerk of Liverpool) held the view that there were sufficient associations in existence, and he referred to the good work done by the Municipal Corporations Association. He was strongly of opinion that a new association would tend to weaken the influence of others, and to confuse the Local Government Board and Members of Parliament on public health matters.

Mr. SOLOMON (Swansea) welcomed the formation of the proposed union.

Dr. MOORE (Huddersfield) said he did not quite understand the proposition, though he sympathised with the object. There was substantial value in the amendment, and there was precedent for such a plan in the Army Medical Council, to which eminent surgeons who were not officers were co-opted.

Mr. ASKEW (Hull) supported the resolution.

Councillor ADAMS (Newcastle-on-Tyne was surprised that any one with experience of the procrastination and lack of business capacity on the Local Government Board should hope for any good result from the adoption of the amendment. Such a union as was contemplated would be a practical, not an amateur, body, and might hope to influence Parliament directly.

The CHAIRMAN, in his reply, resented allusion to "amateur" associations as scarcely courteous to himself, who had an experience extending over 45 years.

Dr. HUTTING said he had not the slightest intention of being discourteous.

The CHAIRMAN said there would be no antagonism to other associations in accepting the resolution ; simply the idea was that the importance of public health required combination among authorities for discussion, exchange of views, and continuity of work. The resolution embodied the principle, but he had no cut-and-dried scheme for its development ; that was matter for subsequent consideration.

Upon a show of hands the amendment was rejected, and the resolution was adopted by a large majority.

Further resolutions were adopted, empowering the Chairman and Dr. H. E. Armstrong (Newcastle) as a Provisional Committee to draw up a constitution to be afterwards discussed, and to communicate with sanitary authorities asking their adhesion to the union under the name of "National Union of Public Health Authorities."—*The Times.*

ELECTRIC NARCOSIS.

Professor Leduc has described a condition, to which the above name has been given, brought about by the application of electric currents to the brain and during which the subject is without voluntary movement, makes no reply to stimulation, and exhibits only some reflex movements—the beating of the heart and respiration—and this state can be maintained for several consecutive hours, ceasing immediately with the stoppage of the current. The current employed is an intermittent one of low tension and unidirectional. The impulses follow one another at the rate of 100 per second and the duration of each impulse is one-tenth of this, or one-thousandth of a second. This form of current is produced by a special design of commutator for this purpose and the frequency, as well as the relation of duration of impulse to duration of interval, are what have been found best for the production of electric narcosis after a pro-

longed and extensive series of experiments. Prof. Leduc has also found that the results obtained when the source of energy is from accumulators are much better than when the street mains are used. The current is applied to the head by means of electrodes placed antero-posteriorly, suitably padded and adaped to the surface contour. The interruption is first started and then the current is gradually turned on—at first quickly, then more slowly. As in chloroform narcosis, excitement first comes on, followed by inhibition, but by raising the current very slowly during the period of excitement the animal without a movement or sign of pain passes into a state of cerebral inhibition analogous to the narcosis of chloroform or ether. The animal reacts to no stimulus, any operation can be done on it, and the limbs if moved seem to be under no influence except that of gravity. When the current is cut off the awakening is instantaneous. Usually the animal gets on to its feet, looks quietly about, and shows no sign of fright, suffering, or fatigue. In the case of the animals experimented upon there were no after-effects, no vomiting, rarely a little stupor, and no resentment or aversion to the experimenters. It is not necessary to describe these experiments in any further detail here—enough has been said to demonstrate their importance. So far the method has been applied only once to the human subject, and then not to complete loss of sensation, and that was to Professor Leduc himself in the presence of Malherbe and Rouxeau of the School of Medicine of Nantes. He describes his sensations very minutely and his only regret was that they did not carry the narcosis to the degree of complete anæsthesia. The paper should be read by every medical man, whether he be interested in medical electricity or not.—*The Lancet.*

Anthrax in Forfarshire.

At a meeting of the Emergency Committee of the Forfarshire Local Authority held at Forfar on Nov. 13—Mr. William Whyte Hatton, of Eassie, presiding—the question of bleeding an animal which had died suddenly arose out of the reading of a report concerning a case in connection with the recent outbreaks of anthrax in the county. From that report it was shown that at one farm two animals had died from anthrax, and that subsequently a third took ill and was killed, it being found not to be suffering from the disease. On Oct. 4, a fourth animal was found dead on the farm buildings, and the cattleman, believing that it might be a case of illness like that of the third beast, cut the throat of the dead ox. The disease, however, on the examination of the blood, turned out to be anthrax. The Local Authority were of opinion that under the circumstances the cattleman had some grounds for supposing that this fourth case might not turn out to be anthrax, and they did not think it was a case for prosecution. At the same time the authority desired stockowners and all persons in charge of cattle to be very careful not to spill the blood of suspected animals, as such cases would probably be prosecuted in the future.

The Clerk submitted correspondence with regard to the authority's decision to take steps to have the blood of every animal suspected to have died of anthrax microscopically examined by an expert, and after some deliberation the meeting resolved to appoint Dr. J. Taylor Grant, of the Edinburgh and East of Scotland College of Agriculture, as their expert. It was reported that a case of anthrax had broken out at the farm of Auchleishie, an animal having succumbed to the malady. Animals have also recently died at some of the other farms previously reported as affected.—*N.B.A.*

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Nov. 16	16	19			24	52			17	28	170
Corresponding week in 1906 ..	22	23			23	42			11	37	221
Corresponding week in 1905 ..	14	14			17	29			15	9	34
Corresponding week in 1904 ..	22	27			24	41			16	14	141
Total for 46 weeks, 1907	957	1283			763	1749			484	2167	10417
Corresponding period in 1906 ..	812	1153			974	1846			366	1064	6079
Corresponding period in 1905 ..	856	1167			1090	1867			759	715	3203
Corresponding period in 1904 ..	893	1349			1373	2398			1164	1113	5261

Board of Agriculture and Fisheries, Nov. 19, 1907.

IRELAND. Week ended Nov 9	..	..	..	..	..	..	..	..	6	1	109
Corresponding Week in 1906 ..	..	..	..	..	..	..	..	..	5	..	7
Corresponding Week in 1905 ..	..	..	..	..	1	1	..	..	6	..	1
Corresponding Week in 1904 ..	..	..	..	..	..	..	..	..	11	1	15
Total for 45 weeks, 1907	3	5	..	..	5	9	..	..	218	140	2523
Corresponding period in 1906 ..	3	7	..	..	8	16	..	..	195	86	955
Corresponding period in 1905 ..	3	5	..	..	29	95	..	..	257	125	1404
Corresponding period in 1904 ..	3	3	..	..	10	31	..	..	403	297	4067

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 14, 1907.

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

REVIEW.

OPHTALMOLOGIE VÉTÉRINAIRE ET COMPARÉE, par le Dr. E. NICOLAS, Vétérinaire en 1er de l'armée. (Veterinary and Comparative Ophthalmology with nine chromolithographic plates and 165 figures interspersed in the text. Cr. 8vo., pp. 468+xi. Publishers: Messrs. Asselin and Houzeau, Place de l'Ecole de Médecine, Paris, 1908.

The author, Dr. Nicolas, in conjunction with Dr. C. Fromaget, brought out the *Précis d'Ophtalmoscopie Vétérinaire* in 1898, which then, the reviewer thought would, if translated into our language, be a boon to English speaking veterinary surgeons. But as obstacles stood in the way the task was never attempted, much to the reviewer's regret.

The present small manual of Veterinary and Comparative Ophthalmology from the pen of the first named author is a much larger work and covers more ground than its predecessor. It not only embraces Ophthalmoscopy but also the medical and surgical diseases, and their treatment of the eye of the various domesticated animals.

After going into the generalities of the anatomy of the eye it considers the organ from an optical point of view, and then proceeds to describe the various methods of its examination. Continuing, it discusses and illustrates with fine chromolithographic plates, the ophthalmoscopic state of the normal eye; describes the anatomy, physiology, pathology, and therapeutics of the Conjunctiva, Sclerotic, Cornea, Uveal tract—including the Iris, Ciliary Bodies and Choroid, Retina and Optic Nerve, Lens, Vitreous Humour, and the Eyeball as a whole. It then goes on in the same order to the Orbit, Lids, Lachrymal Apparatus and Motor Apparatus, and after giving a chapter on Formulary, it winds up with a complete Bibliography, which, however, does not mention the splendid atlas of the fundus oculi of many of the Mammalia by Dr. Lindsay Johnson.

Thus is the scope of the work which the author has aimed at to make as lucid, concise, and at the same time complete as possible, only avoiding that which seemed exclusively theory. In reality, the object of the work has been to make it a practical manual for the use of students and practitioners who, in this country, have no such help in this direction as their Austrian, French, German, and Italian colleagues, who have in their respective languages works dealing exclusively with Veterinary Ophthalmology, a subject with us utterly neglected except by that indefatigable student, Major-General Smith, A.V.S., who a few years ago (1894) contributed an article on "The Ophthalmoscope in Veterinary Practice" to the pages of *The Journal of Comparative Pathology and Therapeutics*. Still, however, one must not forget the teachings of Coleman, who in his day was a great authority on the subject, Percival, Williams, Walley, and others who have contributed crude articles and reported interesting cases to the various works and journals of Veterinary Medicine, in which one may find much useful, if scattered, information on the diseases of the eye.

The author is to be congratulated on his success in producing such a valuable work for his compatriots. It is a distinct gain to French veterinary literature. It is not a mere compilation, as it embodies the results of many years patient labour and careful research into the ophthalmoscopic and diseased state of animals, especially the army horse, in which disease of the eye, more particularly periodic ophthalmia, seem more rampant in Continental armies than it is apparently with us, judging by the paucity of modern literature on the subject in this country. The book is well illustrated, printed in a good type, and reflects great credit not only upon Dr. Nicolas but also the well-known publishers, Messrs. Asselin and Houzeau, Paris.

To those of our colleagues who read French we can heartily recommend it, and to those who do not know this langnage we say buy it, as the illustrations themselves will act as a valuable guide in the ophthalmoscopic examination of the normal and diseased background of the eye, notably that of the horse. With the chromolithographic plates at his side, and a little practice with an ordinary ophthalmoscope, or what is preferable a direct ophthalmic illuminator, the task of making out a positive or negative diagnosis of some hitherto obscure disease of the deeper structures of the eye, and even some of those of the brain, would become not only easier but more pleasurable and profitable than was formerly the case, when one had to rely upon guess work or the opinion of an expert who, if a medical man, knew very little of the subject so far as animals were concerned. Hence the necessity of a work from the pen of one who has had a long practical experience in this direction. H. G.

The "Docking" of Horses—Farmer Fined.

A case occupied the Axbridge Petty Sessional Court for over two hours on Monday, Nov. 11th, when Mr. Edwin Weeks, of Westbury-sub-Mendip, farmer, was summoned by the R.S.P.C.A., at the instance of Inspector Roberts, of Weston-super-Mare, for cruelty to a pony at Cheddar by the alleged unskilful docking of its tail. The owner of the pony, William Hudson, a labourer, of Cheddar, was summoned for causing the animal's tail to be docked. Both cases were taken together. Mr. A. J. Mawer, of Wells, prosecuted on behalf of the Society, and Mr. H. C. Garrod, also of Wells, represented the defendants.

Mr. Mawer said he did not think the case was very strong against Hudson, the owner of the horse, and he should not be adverse to the case against him being withdrawn.

P.C. Benjafield deposed to seeing Hudson's horse in a field at Cheddar. It had been recently docked, and the end of the tail was much swollen. On the following day, in company with Inspector Roberts, he again examined the animal. The bone of the tail was protruding, and the pony appeared to be in great pain. Defendant said he had Mr. Weeks to perform an operation on the pony, and after this Mr. Weeks said to him "how about having a bit of the pony's tail cut off now he's down." Hudson replied "I know nothing about it, I will leave that to you." Weeks said "It's worth more with its tail shorter." Hudson told Weeks to do what he thought was best, and Weeks docked the pony. Witness saw the pony a few days after and it was still suffering.

John Simmonds, a market gardener, of Cheddar, said he had no idea but that everything was all right. After docking the end the tail was seared with a hot iron.

Inspector Roberts gave evidence of a visit he paid the pony and to an interview he had with Hudson. The pony was six years of age, and was in fair condition. He described the state in which the pony was in in consequence of the docking, and it was at that time suffering a great deal of pain, particularly from the tail. Witness saw Weeks later at Wells, and had a conversation with him. Weeks said "Well I don't think you can interfere unless the pony is dead, and I suppose it is going on all right." Witness told him he did not think it was going on all right; and asked him if he docked it with a proper docking machine. He answered "No, I docked it with my knife, I don't believe in those machines." Witness held that with a pony six years old it was almost impossible to properly cut off the tail with a pocket-knife. He also thought the hot iron was unnecessary.

By Mr. Garrod: The tail was not taken off at the joint. The pony was suffering more pain from the docking than from the other operation. Horse owners were very chary of having horses docked when they were six years old.

Charles M. Rawlins, veterinary surgeon, of Weston-super-Mare, said he saw the pony, and noticed that it had been docked, but it was not skilfully done. The other operation had been skilfully performed. The pony was in pain.

By Mr. Garrod: The use of the hot iron would set up inflammatory action. It was not an uncommon age to dock a pony at the age of six years, but it was a cruel practice at that age, unless done under special conditions.

By Col. Long: He believed the use of the hot iron was cruel and unnecessary, and a skilled operator would not use it,

Mr. Garrod said the case was one of considerable importance to his clients, especially to Mr. Weeks, who in addition to being a farmer, was in the habit of docking horses, not only in Somerset, but in Gloucester, Dorset, and Wilts. He docked on an average something like 400 a year, and he had never had the slightest complaint of cruelty or lack of skill. The decision of the Bench would affect a large number of the members of the agricultural community.

Mr. Edwin Weeks, the defendant, said he had carried on the trade of a castrator, spayer, and docker for thirty-one years, and his father fifty years before him. He gave in detail the manner in which he performed the operation of docking, especially in relation to the pony. This, he said, was done in a skilful manner and at the joint. He suggested to Hudson that he should dock the pony, and he agreed. He seared the tail with the hot iron. This was to stop the bleeding.

By Col. Long: He did not think it unfair to perform the two operations on a horse six years of age.

By Mr. Mawer: It generally took a month for a horse to get well after the two operations. It was more humane to perform the two operations at once.

William Hudson, a labourer, of Ham Cottage, Cheddar, and the other defendant, deposed to giving Mr. Weeks permission to dock the pony. It had not lost flesh, and was now in good condition.—At this point the case against Hudson was withdrawn.

Thomas Isgar, market gardener, of Cheddar, thought the operation was performed properly, and that the pony had gained flesh since.

George Adlam, a farmer, of Horrington, said Mr. Weeks had operated on horses for him and always used the hot iron.—Mr. W. Tyley, farmer, of Westbury-sub-Mendip: Mr. James Tyley, farmer, of Rodney Stoke; and Mr. Edward Tyley, farmer, of Cheddar, gave similar evidence.

The magistrates retired to consider their decision, and on their return the Chairman said the majority of the magistrates were of opinion that the operation was unskilfully performed, and fined the defendant 10s. and costs. Mr. Mawer applied that an advocate's fee be allowed, and the Bench consented. The costs came to £3 9s.—On the application of Inspector Roberts, the costs against the Society in Hudson's case were remitted.—*The Somerset County Herald.*

Possible Legislation for Tuberculosis.

At a meeting on the 15th inst. at Exeter of the Devonshire Agricultural Association a letter was read from the Royal Agricultural Society stating that it had been decided to form a national representative body for the purpose of safeguarding the interests of agriculture in view of possible legislation with regard to tuberculosis in cattle. A meeting was to be held in December to discuss the matter, and the Society asked the Council to appoint delegates to attend.

Mr. Morgan thought it would be impossible to take any definite action until foreign countries recognised the certificates of veterinary surgeons in England. The matter was a very difficult one, and he thought the Council should thoroughly consider it before deciding to send delegates. Not one-half of the disease reported in cattle existed, and until foreign countries gave them power to prove their innocence they should have nothing to say. Parliament should take action in the matter.

It was eventually decided that Messrs. Eve, M.P., Morgan, and Mildmay, M.P., should be asked to attend the meeting.

Anthrax Case Appeal Fund.

A Council meeting of the Lancashire Veterinary Medical Association was held at the Grand Hotel, Manchester, on Wednesday, Nov. 20, to consider the result of the above appeal. The President, A. H. Darwell, Esq., of Northwich, in the chair, supported by a representative meeting. The Treasurer submitted the list of subscriptions amounting to £35 10s. 6d., also the bill of costs £63 15s. 10d. incurred by the defence, which, he was pleased to say, was successful in quashing the conviction (each side paying its own costs.)

The question at issue being of so great importance to the veterinary profession it was proposed, seconded, and carried that a *second appeal* be made to assist Mr. Norbury in defraying the costs. Subscriptions will be received and duly acknowledged by the Hon. Treasurer.

G. H. Locke, *Hon. Sec. & Treas.*

Grosvenor Street, Manchester.

Second List.	£	s.	d.
Mr. J. Norbury, Knutsford	5	5	0
J. & H. Sumner, Liverpool	1	1	0
A. H. Darwell, Northwich	1	1	0
E. Faulkner, Manchester	1	1	0
T. Hopkin, „	1	0	0
W. Woods, Wigan		10	6
J. B. Wolstenholme, Manchester		10	6

ARMY VETERINARY SERVICE.

The undermentioned officers arrived from India on 8th November on completion of a tour of foreign service:—

Colonel Kay-Lees, Captains G. T. Jackson and C. E. Steel.

Captain Jackson has been posted to Bulford for duty and Captain Steel to Woolwich.

OBITUARY

John Fairbairn, M.R.C.V.S. Alnwick, Northumberland
Graduated, Lond: April, 1862.

Mr. Fairbairn died on Monday, 11th inst, at the age of 73, from exhaustion resulting from Carcinoma of the Larynx.

Robert Youngs, M.R.C.V.S., St. Austell.
Lond: Dec., 1892.

Death took place with tragic suddenness at eight o'clock on Saturday evening last. It appears that Mr. Youngs returned from his round early in the afternoon and complained of feeling unwell. Later in the evening he was in his office with his assistant, and a few minutes after the latter had left to post the letters he had been writing, Mrs. Youngs went to the office and found her husband sitting in his chair and looking very peculiar. A doctor was summoned, and he pronounced life to be extinct. Deceased had been treated for heart trouble.

We regret to announce that yet another member of our profession has lost his life in the study of glanders. Herr Prettner, Veterinary Inspector of the abattoir at Prague, inoculated himself in the laboratory while engaged in an attempt to obtain a serum against glanders, and has succumbed to the disease.

CORRESPONDENCE.

MILK FEVER IN COWS.

Sir,

I must first thank Messrs. Leeney and Mayall for their straightforward criticism on my old reproduced article on Milk Fever in Cows in *The Record*. Certainly the credit is due to Schmidt of being the first to record the injecting of the udder with a solution of pot. iodide as a remedy for milk fever in cattle; I did not deny this. What I did state was that the injecting of the mammary gland with medicinal agents, and the theory that milk fever had its origin in the udder was known prior to his announcing his remedy. Now with all due deference to Schmidt and others, I must state that I have not found the injecting of the udder for milk fever the panacea it is reported to be: holding the view as I do that the malady originates in the udder I feel sadly disappointed with the results I have had following the injection of the gland. Living in a locality noted for the production of well-bred, heavy bodied, big boned, well developed deep milkers, and of which class of dairy cows large consignments are sent weekly from this station to Edinburgh and other large cities, and seeing that milk fever is very rife, I can safely say that not a case is now treated by udder injection, and yet the percentage of recoveries is all that can be wished. There are cases *and* cases of milk fever: some recover without any medical treatment whatever, only careful and good nursing, but there are other cases that all the injections and medicines in the world would not save. And as to the injections, some say solution of pot. iodide, others chinosol, warm water, oxygen, filtered and unfiltered atmospheric air, all of which are reported as proving more or less successful; strange I have tried them all, and although every care has been taken I have been greatly disappointed with the results. Now with the injecting of all these various agents into the gland, I would like to know what is considered their therapeutic action. Is it chemical or mechanical (pressure), or is it not that the toxic action passes off similar to that of a man who has indulged too freely, and that the remedial goddess is *vis medicatrix naturæ*. I am afraid that there is too much of the "Sheep and the Bell Wether" as well as fashion in the treatment of disease.

Aspatria, Nov. 18. HENRY THOMPSON.

FOLLICULAR MANGE.

Sir,

Will H.G., the translator of the paragraph on Follicular Mange in your issue of the 16th inst., oblige by stating whether or no the original article mentioned the quantity of carbolic solution injected. If it was stated, one would like to know before commencing the treatment.—Yours faithfully,

H. C. REEKS, F.R.C.V.S.

ADVERTISING AND INCOME.

Sir,

As a country practitioner may I be allowed to point out a few facts which probably do not affect the town practitioner so much as they do the man who is entirely dependent (or almost so) on the agricultural community for a living. At the present time we hear a great deal about keeping up the tone of the veterinary profession, and the so-called degradation of advertising. I suppose all practitioners, but more particularly the country ones, feel the effect of the large sale of the quack veterinary medical remedies. In the majority of cases it is not that the medicines that are sold are more potent or effectual than those of the properly educated practitioner, but that they are *pushed* by the vendor or his agent in such a manner that the buyer firmly believes that he is getting much more than his money's worth. It is no doubt the proper thing to do to educate the public and to teach them that the qualified man knows far more than the empiric, but this is much easier in theory than in practice. There are no restrictions against these quack remedies being largely advertised, then why tie the hand of the man whose education is not only expensive but whose income is slowly but surely decreasing owing to competition, and competition not among the legitimate members of the profession but from an outside source. Surely the remedy is not to tie the hand but to allow one to fight these empirics with their own weapons. At the present time we hear so much that this or that is not professional. But men must live, and though I for one should be delighted if the veterinary surgeon took the position that he is entitled to, as far as I can see, if a man conducts himself as a gentleman and does unto his fellows as he would be done by, I fail to see why it should be considered derogatory to make the best use of one's talents. Advertising I am sure could be done in such a manner that would not offend the good taste of one's clients, and need not be done in that way which would at once stamp the advertiser as a cad.

Another point that touches the country practitioner is the question of small fees. I myself have seen practice in many parts of England and Ireland, and in no two parts are the fees the same. The part of the country I am practising in at present is certainly not notable for good remuneration for certain kind of work, but it is no good refusing to work for the fee offered, for in that case empirics would be employed, and the country practitioner at present cannot afford to be too independent.

Again, insurance companies pay very small fees for examination, but considering the smallness of their premiums can they afford to pay more? Many veterinary surgeons I know used to augment their incomes by holding agencies in these companies, but I believe several of them have had to resign their agency, because they received a letter from the Registration Committee pointing out that it was not allowable to use the insurance company's label. The Committee may raise the tone of the profession but they are certainly reducing the income of individual members. If things of this sort continue, in a short time it will be no good any man thinking of settling down in the country to make a living, in fact the veterinary profession will require no member who has not a private income. The law prohibiting advertising by the professional man is the greatest help to the empiric and medicine vendor, as it leaves them with a clear field.—Yours obediently,

COUNTRY PRACTITIONER.

PROFESSIONAL ETIQUETTE.

Sir,

Is it etiquette for a member of the veterinary profession to attempt to treat cases through the medium of a newspaper? I am referring particularly to "Vet's." replies to queries in the columns of *The Farmer and Stockbreeder*.

In "Replies to queries" in the issue of Nov. 4th, 1907, he advises a farmer to go to a "veterinary surgeon who is really well up in his profession." Does he suggest that the average farmer is a fit and competent person to judge of the qualifications of a veterinary surgeon?

In the same number he, under the head of "Husk in Calves," advises the owner to procure intertracheal syringes through the medium of a chemist, in spite of the fact that several members of the profession have invited the co-operation of instrument makers to prevent the promiscous sale of these and other veterinary instruments.

I ask you, Mr. Editor, is this professional conduct?

"FAIRPLAY."

COMMUNICATIONS AND PAPERS RECEIVED.—Messrs. W. M. Scott, Henry Thompson, J. Peddie, J. C. De Ville, H. C. Reeks, F. W. Anderton, G. H. Locke, L.R.C. James Gregg, "Fairplay," "Country Practitioner."

Farmer and Stockbreeder, Sheffield Daily Telegraph, The Marlborough Times, The Staffordshire Advertiser.